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CLAIMS

1. A fuel cell vehicle, comprising:

a fuel cell power system (100) which generates power using hydrogen and oxygen;

a motor (9) for a vehicle drive which runs by receiving the power supplied from the fuel cell power system (100); and

a controller (10) functioning to:

compute an electrical load demand required for running the vehicle,

operate the fuel cell power system (100) under a constant load regardless of the electrical load demand, when the electrical load demand is smaller than a predetermined load, and

operate the fuel cell power system (100) under a load according to the electrical load demand, when the electrical load demand is larger than the predetermined load.

2. The fuel cell vehicle as defined in Claim 1, wherein:

the electrical load demand is an instantaneous value of an electrical load required for running the vehicle.

3. The fuel cell vehicle as defined in Claim 1, wherein:

the electrical load demand is a time average of an electrical load required for running the vehicle.

4. The fuel cell vehicle as defined in Claim 1, wherein:

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steady state operation under the predetermined load is included in the constant load operation.

5. The fuel cell vehicle as defined in Claim 1, wherein:

idle operation is included in the constant load operation.

6. The fuel cell vehicle as defined in Claim 1, wherein:

stop state is included in the constant load operation.

7. The fuel cell vehicle as defined in Claim 4, further comprising:

a battery (7) which stores the power generated by the fuel cell power system (100), and

a sensor (13) which detects a charge state of the battery (7), wherein

the controller (10) further functions to change over the operating state of the fuel cell power system (100) from the steady state operation to the idle operation state, when the charge state of the battery (7) reaches an predetermined upper limit.

8. The fuel cell vehicle as defined in Claim 4, further comprising:

a battery (7) which stores the power generated by the fuel cell power system (100), and

a sensor (13) which detects a charge state of the battery (7), wherein

the controller (10) further functions to change over the operating state of the fuel cell power system (100) from the steady state operation to the stop state, when the charge state of the battery (7) reaches a predetermined upper limit.

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9. The fuel cell vehicle as defined in Claim 1, wherein the predetermined load is a load corresponding to the maximum efficiency operating point of the fuel cell power system (100).

10. The fuel cell vehicle as defined in Claim 1, wherein the controller (10) further functions to:

continuously operate the fuel cell power system (100) so that the operating load of the fuel cell power system (100) is the electrical load demand, when the electrical load demand is larger than the predetermined load.

11. The fuel cell vehicle as defined in Claim 1, further comprising:

a battery (7) which stores the power generated by the fuel cell power system (100), and

a sensor (13) which detects a charge state of the battery (7), wherein the controller (10) further functions to:

operate the fuel cell power system (100) such that the battery (7) is charged until the charge state of the battery (7) reaches a predetermined upper limit, when the charge state of the battery (7) reaches a predetermined lower limit, and

operate the fuel cell power system (100) in the idle operation state until the charge state of the battery (7) reaches the predetermined lower limit, when the charge state of the battery (7) reaches the predetermined upper limit.

12. The fuel cell vehicle as defined in Claim 1, further comprising:

a battery (7) which stores the power generated by the fuel cell power system (100), and

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a sensor (13) which detects a charge state of the battery (7), wherein the controller (10) further functions to:

operate the fuel cell power system (100) such that the battery (7) is charged until the charge state of the battery (7) reaches a predetermined upper limit, when the charge state of the battery (7) reaches a predetermined lower limit, and

stop the fuel cell power system (100) until the charge state of the battery (7) reaches the predetermined lower limit, when the charge state of the battery (7) reaches the predetermined upper limit.

13. The fuel cell vehicle as defined in Claim 1, further comprising:

a battery (7) which stores the power generated by the fuel cell power system (100), and

a sensor (13) which detects a charge state of the battery (7), wherein the controller (10) further functions to compensate the predetermined load according to the charge state of the battery (7).

14. The fuel cell vehicle as defined in Claim 3, wherein the time average of the electrical load demand is the average of the electrical load demand in a time interval shorter than the startup time of the fuel cell power system (100).

15. The fuel cell vehicle as defined in Claim 1, further comprising:

a battery (7) which stores the power generated by the fuel cell power system (100), wherein the controller (10) further functions to:

continuously operate the fuel cell power system (100) such that the operation load of the fuel cell power system (100) is a value obtained by compensating the

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electrical load demand according to the charge state of the battery (7), when the electrical load demand is larger than the predetermined load.

16. A fuel cell vehicle, comprising:

- a fuel cell power system (100) which generates power using hydrogen and oxygen;

- a motor (9) for a vehicle drive which runs by receiving the power supplied from the fuel cell power system (100);

- a battery (7) which stores the power generated by the fuel cell power system (100);

- a sensor (13) which detects a charge state of the battery (7); and

- a controller (10) functioning to:

 - compute an electrical load demand required for running the vehicle,

 - operate the fuel cell power system (100) under a constant load regardless of the electrical load demand, when the electrical load demand is smaller than a predetermined load,

 - operate the fuel cell power system (100) under a load according to the electrical load demand, when the electrical load demand is larger than the predetermined load,

 - operate the fuel cell power system (100) such that the battery (7) is charged until the charge state of the battery (7) reaches a predetermined upper limit, when the charge state of the battery (7) reaches a predetermined lower limit, and

 - operate the fuel cell power system (100) in the idle operation state until the charge state of the battery (7) reaches the predetermined lower limit, when the charge state of the battery (7) reaches the predetermined upper limit.

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17. A fuel cell vehicle, comprising:

a fuel cell power system (100) which generates power using hydrogen and oxygen;

a motor (9) for a vehicle drive which runs by receiving the power supplied from the fuel cell power system (100);

a battery (7) which stores the power generated by the fuel cell power system (100);

a sensor (13) which detects a charge state of the battery (7), and

a controller (10) functioning to:

compute an electrical load demand required for running the vehicle,

operate the fuel cell power system (100) under a constant load regardless of the electrical load demand, when the electrical load demand is smaller than a predetermined load,

operate the fuel cell power system (100) under a load according to the electrical load demand, when the electrical load demand is larger than the predetermined load,

operate the fuel cell power system (100) such that the battery (7) is charged until the charge state of the battery (7) reaches a predetermined upper limit, when the charge state of the battery (7) reaches a predetermined lower limit, and

stop the fuel cell power system (100) until the charge state of the battery (7) reaches the predetermined lower limit, when the charge state of the battery (7) reaches the predetermined upper limit.